

Jan Delaval  
Please.

81525

8D08

# SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Ganapathy Krishnan Examiner #: 79271 Date: 12/2/02  
Art Unit: 1623 Phone Number: 305-4837 Serial Number: 109890348  
Mail Box and Bldg/Room Location: 8D08 Results Format Preferred (circle): PAPER DISK E-MAIL  
8B19

If more than one search is submitted, please prioritize searches in order of need.

\*\*\*\*\*

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Method for producing cellulose sulfoacetate derivatives and products and mixtures thereof

Inventors (please provide full names): Gaelle Chauvallon; Luc Saulnier;  
Alain Buleon; Jean-Francois Thibault

Earliest Priority Filing Date: \_\_\_\_\_

\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Search for a process for producing  
water soluble cellulose sulfoacetate.  
(claims 1-4).

Other limitations in claims 5-22.  
and author search.

RECEIVED

DEC -3 2002

STIC

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Jan Delaval  
Reference Librarian  
Biotechnology & Chemical Library  
CM1 1E07 - 703-308-4498  
jan.delaval@uspto.gov

## STAFF USE ONLY

Searcher: Jan  
Searcher Phone #: 4498  
Searcher Location: \_\_\_\_\_  
Date Searcher Picked Up: 12/7/02  
Date Completed: 12/7/02  
Searcher Prep & Review Time: \_\_\_\_\_  
Clerical Prep Time: 20  
Online Time: 105

### Type of Search

NA Sequence (#) \_\_\_\_\_  
AA Sequence (#) \_\_\_\_\_  
Structure (#) \_\_\_\_\_  
Bibliographic ☒ \_\_\_\_\_  
Litigation \_\_\_\_\_  
Fulltext \_\_\_\_\_  
Patent Family \_\_\_\_\_  
Other \_\_\_\_\_

### Vendors and cost where applicable

STN ☒ \_\_\_\_\_  
Dialog \_\_\_\_\_  
Questel/Orbit \_\_\_\_\_  
Dr.Link \_\_\_\_\_  
Lexis/Nexis \_\_\_\_\_  
Sequence Systems \_\_\_\_\_  
WWW/Internet \_\_\_\_\_  
Other (specify) \_\_\_\_\_

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=> fil reg

FILE 'REGISTRY' ENTERED AT 13:12:26 ON 07 DEC 2002  
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
COPYRIGHT (C) 2002 American Chemical Society (ACS)

Property values tagged with IC are from the ZIC/VINITI data file  
provided by InfoChem.

STRUCTURE FILE UPDATES: 6 DEC 2002 HIGHEST RN 475385-56-9  
DICTIONARY FILE UPDATES: 6 DEC 2002 HIGHEST RN 475385-56-9

TSCA INFORMATION NOW CURRENT THROUGH MAY 20, 2002

Please note that search-term pricing does apply when  
conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. See HELP  
PROPERTIES for more information. See STNote 27, Searching Properties  
in the CAS Registry File, for complete details:

<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

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L89 ANSWER 1 OF 11 REGISTRY COPYRIGHT 2002 ACS  
RN 474043-90-8 REGISTRY  
CN Cellulose, sulfoacetate, barium salt (9CI) (CA INDEX NAME)  
MF C2 H4 O5 S . x Ba . x Unspecified  
PCT Manual registration, Polyother, Polyother only  
SR CA  
LC STN Files: CA, CAPLUS

CM 1

CRN 9004-34-6  
CMF Unspecified  
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 123-43-3  
CMF C2 H4 O5 S

HO<sub>2</sub>C-CH<sub>2</sub>-SO<sub>3</sub>H

1 REFERENCES IN FILE CA (1962 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1962 TO DATE)

REFERENCE 1: 137:339217

L89 ANSWER 2 OF 11 REGISTRY COPYRIGHT 2002 ACS  
RN 474043-89-5 REGISTRY  
CN Cellulose, sulfoacetate, potassium salt (9CI) (CA INDEX NAME)  
MF C2 H4 O5 S . x K . x Unspecified  
PCT Manual registration, Polyother, Polyother only  
SR CA  
LC STN Files: CA, CAPLUS

CM 1

CRN 9004-34-6  
CMF Unspecified  
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 123-43-3  
CMF C2 H4 O5 S

 $\text{HO}_2\text{C}-\text{CH}_2-\text{SO}_3\text{H}$ 

1 REFERENCES IN FILE CA (1962 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1962 TO DATE)

REFERENCE 1: 137:339217

L89 ANSWER 3 OF 11 REGISTRY COPYRIGHT 2002 ACS

RN **286942-63-0** REGISTRY

CN Cellulose, acetate hydrogen sulfate, potassium salt (9CI) (CA INDEX NAME)

OTHER NAMES:

CN Potassium cellulose acetate sulfate

MF C2 H4 O2 . x H2 O4 S . x K . x Unspecified

PCT Manual registration, Polyother, Polyother only

SR CA

LC STN Files: CA, CAPLUS

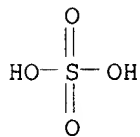
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CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

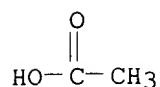
CM 2

CRN 7664-93-9  
CMF H2 O4 S



CM 3

CRN 64-19-7  
CMF C2 H4 O2



1 REFERENCES IN FILE CA (1962 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1962 TO DATE)

REFERENCE 1: 133:137001

L89 ANSWER 4 OF 11 REGISTRY COPYRIGHT 2002 ACS  
RN 177931-56-5 REGISTRY  
CN Cellulose, acetate hydrogen sulfate, ammonium salt (9CI) (CA INDEX NAME)  
MF C2 H4 O2 . x H3 N . x H2 O4 S . x Unspecified  
SR CA  
LC STN Files: CA, CAPLUS

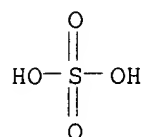
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CRN 9004-34-6  
CMF Unspecified  
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

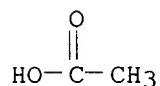
CM 2

CRN 7664-93-9  
CMF H2 O4 S



CM 3

CRN 64-19-7  
CMF C2 H4 O2



1 REFERENCES IN FILE CA (1962 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1962 TO DATE)

REFERENCE 1: 125:36155

L89 ANSWER 5 OF 11 REGISTRY COPYRIGHT 2002 ACS  
RN 145268-50-4 REGISTRY  
CN Cellulose, sulfoacetate, sodium salt (9CI) (CA INDEX NAME)  
OTHER NAMES:  
CN Sodium cellulose sulfoacetate  
MF C2 H4 O5 S . x Na . x Unspecified  
PCT Manual registration

SR CA  
LC STN Files: CA, CAPLUS

CM 1

CRN 9004-34-6  
CMF Unspecified  
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 123-43-3  
CMF C2 H4 O5 S

HO<sub>2</sub>C-CH<sub>2</sub>-SO<sub>3</sub>H

3 REFERENCES IN FILE CA (1962 TO DATE)  
1 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
3 REFERENCES IN FILE CAPLUS (1962 TO DATE)

REFERENCE 1: 137:339217

REFERENCE 2: 134:223618

REFERENCE 3: 118:41009

L89 ANSWER 6 OF 11 REGISTRY COPYRIGHT 2002 ACS

RN 51910-28-2 REGISTRY

CN Cellulose, acetate hydrogen sulfate, sodium salt (9CI) (CA INDEX NAME)

OTHER NAMES:

CN Cellulose acetate sulfate sodium salt

CN Sodium cellulose acetate sulfate

DR 56508-78-2

MF C2 H4 O2 . x H2 O4 S . x Na . x Unspecified

PCT Manual registration, Polyother, Polyother only

LC STN Files: CA, CAPLUS, IFICDB, IFIPAT, IFIUDB, USPATFULL

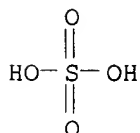
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CRN 9004-34-6  
CMF Unspecified  
CCI PMS, MAN

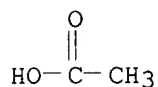
\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 7664-93-9  
CMF H2 O4 S



CM 3

CRN 64-19-7  
CMF C2 H4 O228 REFERENCES IN FILE CA (1962 TO DATE)  
28 REFERENCES IN FILE CAPLUS (1962 TO DATE)

REFERENCE 1: 137:7671  
REFERENCE 2: 133:137001  
REFERENCE 3: 130:257341  
REFERENCE 4: 130:158399  
REFERENCE 5: 127:283391  
REFERENCE 6: 125:36155  
REFERENCE 7: 122:299105  
REFERENCE 8: 121:296194  
REFERENCE 9: 121:212996  
REFERENCE 10: 121:164037

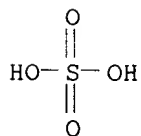
L89 ANSWER 7 OF 11 REGISTRY COPYRIGHT 2002 ACS  
RN 9032-44-4 REGISTRY  
CN Cellulose, acetate sulfate (9CI) (CA INDEX NAME)  
OTHER NAMES:  
CN Sulfocel  
MF C2 H4 O2 . x H2 O4 S . x Unspecified  
PCT Manual registration  
LC STN Files: CA, CAPLUS, USPATFULL

CM 1

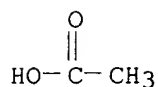
CRN 9004-34-6  
CMF Unspecified  
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 7664-93-9  
CMF H2 O4 S

CM 3

CRN 64-19-7  
CMF C2 H4 O217 REFERENCES IN FILE CA (1962 TO DATE)  
3 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
17 REFERENCES IN FILE CAPLUS (1962 TO DATE)REFERENCE 1: 137:339317  
REFERENCE 2: 137:339217  
REFERENCE 3: 133:137001  
REFERENCE 4: 124:319956  
REFERENCE 5: 123:173199  
REFERENCE 6: 120:273335  
REFERENCE 7: 117:92506  
REFERENCE 8: 113:80801  
REFERENCE 9: 113:80742  
REFERENCE 10: 110:121016

L89 ANSWER 8 OF 11 REGISTRY COPYRIGHT 2002 ACS

RN 9004-34-6 REGISTRY

CN Cellulose (8CI, 9CI) (CA INDEX NAME)

OTHER NAMES:

CN .alpha.-Cellulose

CN .beta.-Amylose

CN 3mAQUACEL

CN 402-2B

CN Alicell LV

CN Alpha Cel PB 25

CN Alphafloc

CN Arbocel

CN Arbocel B 00

CN Arbocel B 600

CN Arbocel B 600/30

CN Arbocel B 800

CN Arbocel B 820C

CN Arbocel BC 1000

CN Arbocel BC 200

CN Arbocel BE 600

CN Arbocel BE 600/10

CN Arbocel BE 600/20

CN Arbocel BE 600/30

CN Arbocel BEM

CN Arbocel BFC 200

CN Arbocel BWW 40

CN Arbocel DC 1000  
CN Arbocel FD 00  
CN Arbocel FD 600/30  
CN Arbocel FIC 200  
CN Arbocel FT 40  
CN Arbocel FT 600/30H  
CN Arbocel G 350  
CN Arbocel TF 30HG  
CN Arbocel TP 40  
CN Avicel  
CN Avicel 101  
CN Avicel 102  
CN Avicel 2330  
CN Avicel 2331  
CN Avicel 955  
CN Avicel CL 611  
CN Avicel E 200  
CN Avicel F 20  
CN Avicel FD 100  
CN Avicel FD 101  
CN Avicel FD-F 20  
CN Avicel M 06  
CN Avicel M 15  
CN Avicel M 25  
CN Avicel NT 020  
CN Avicel PH 101  
CN Avicel PH 102  
CN Avicel PH 105

ADDITIONAL NAMES NOT AVAILABLE IN THIS FORMAT - Use FCN, FIDE, or ALL for  
DISPLAY

DR 12656-52-9, 9012-19-5, 9037-50-7, 9076-30-6, 58968-67-5, 99331-82-5,  
67016-75-5, 67016-76-6, 51395-76-7, 61991-21-7, 61991-22-8, 68073-05-2,  
70225-79-5, 74623-16-8, 75398-83-3, 77907-70-1, 84503-75-3, 89468-66-6,  
39394-43-9

MF Unspecified

CI PMS, COM, MAN

PCT Manual registration, Polyother, Polyother only

LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, BIOBUSINESS, BIOSIS, BIOTECHNO,  
CA, CABA, CANCERLIT, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMLIST,  
CHEMSAFE, CIN, CSCHEM, CSNB, DDFU, DIOGENES, DRUGU, EMBASE, IFICDB,  
IFIPAT, IFIUDB, IPA, MEDLINE, MRCK\*, MSDS-OHS, NAPRALERT, NIOSHTIC,  
PIRA, PROMT, RTECS\*, TOXCENTER, TULSA, ULIDAT, USAN, USPAT2, USPATFULL,  
VTB

(\*File contains numerically searchable property data)

Other Sources: DSL\*\*, EINECS\*\*, TSCA\*\*

(\*\*Enter CHEMLIST File for up-to-date regulatory information)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

59883 REFERENCES IN FILE CA (1962 TO DATE)

7155 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA

59935 REFERENCES IN FILE CAPLUS (1962 TO DATE)

REFERENCE 1: 137:362153

REFERENCE 2: 137:362117

REFERENCE 3: 137:362097

REFERENCE 4: 137:360107

REFERENCE 5: 137:358272

REFERENCE 6: 137:358231



REFERENCE 7: 137:358228

REFERENCE 8: 137:358223

REFERENCE 9: 137:358216

REFERENCE 10: 137:358192

L89 ANSWER 9 OF 11 REGISTRY COPYRIGHT 2002 ACS

RN 7664-93-9 REGISTRY

CN Sulfuric acid (8CI, 9CI) (CA INDEX NAME)

OTHER NAMES:

CN BOV

CN Brimstone acid

CN Contact acid

CN Dihydrogen sulfate

CN Dipping acid

CN Oil of vitriol

CN Sulphuric acid

CN Vitriol brown oil

FS 3D CONCORD

DR 127529-01-5, 119540-51-1, 140623-70-7

MF H2 O4 S

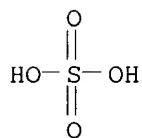
CI COM

LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSCHEM, CSNB, DDFU, DETHERM\*, DIPPR\*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, GMELIN\*, HSDB\*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK\*, MSDS-OHS, NIOSHTIC, PDLCOM\*, PIRA, PROMT, RTECS\*, SPECINFO, TOXCENTER, TULSA, ULIDAT, USAN, USPAT2, USPATFULL, VTB

(\*File contains numerically searchable property data)

Other Sources: DSL\*\*, EINECS\*\*, TSCA\*\*

(\*\*Enter CHEMLIST File for up-to-date regulatory information)



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

74164 REFERENCES IN FILE CA (1962 TO DATE)

3849 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA

74238 REFERENCES IN FILE CAPLUS (1962 TO DATE)

1 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 137:362002

REFERENCE 2: 137:361560

REFERENCE 3: 137:361478

REFERENCE 4: 137:361395

REFERENCE 5: 137:361374

REFERENCE 6: 137:360909  
REFERENCE 7: 137:360272  
REFERENCE 8: 137:360225  
REFERENCE 9: 137:359474  
REFERENCE 10: 137:359472

L89 ANSWER 10 OF 11 REGISTRY COPYRIGHT 2002 ACS

RN 108-24-7 REGISTRY

CN Acetic acid, anhydride (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Acetic anhydride (8CI)

OTHER NAMES:

CN Acetic oxide

CN Acetyl acetate

CN Acetyl anhydride

CN Acetyl ether

CN Acetyl oxide

CN Ethanoic anhydride

FS 3D CONCORD

MF C4 H6 O3

CI COM

LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN\*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSCHEM, CSNB, DETHERM\*, DIPPR\*, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPAT, ENCOMPAT2, GMELIN\*, HODOC\*, HSDB\*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK\*, MSDS-OHS, NIOSHTIC, PDLCOM\*, PIRA, PROMT, RTECS\*, SPECINFO, SYNTHLINE, TOXCENTER, TULSA, ULIDAT, USPAT2, USPATFULL, VTB

(\*File contains numerically searchable property data)

Other Sources: DSL\*\*, EINECS\*\*, TSCA\*\*

(\*\*Enter CHEMLIST File for up-to-date regulatory information)

Ac-O-Ac

\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

12564 REFERENCES IN FILE CA (1962 TO DATE)

324 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA

12588 REFERENCES IN FILE CAPLUS (1962 TO DATE)

4 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 137:361976  
REFERENCE 2: 137:360314  
REFERENCE 3: 137:360311  
REFERENCE 4: 137:360228  
REFERENCE 5: 137:354675  
REFERENCE 6: 137:354396  
REFERENCE 7: 137:353936

REFERENCE 8: 137:353815

REFERENCE 9: 137:353779

REFERENCE 10: 137:353193

L89 ANSWER 11 OF 11 REGISTRY COPYRIGHT 2002 ACS

RN 64-19-7 REGISTRY

CN Acetic acid (7CI, 8CI, 9CI) (CA INDEX NAME)

OTHER NAMES:

CN acetic acid

CN Aci-Jel

CN Ethanoic acid

CN Ethanoic acid monomer

CN Ethylic acid

CN Glacial acetic acid

CN Methanecarboxylic acid

CN Vinegar acid

FS 3D CONCORD

DR 77671-22-8

MF C2 H4 O2

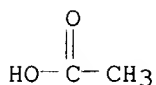
CI COM

LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN\*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSCHEM, CSNB, DDFU, DETHERM\*, DIOGENES, DIPPR\*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, GMELIN\*, HODOC\*, HSDB\*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK\*, MSDS-OHS, NAPRALERT, NIOSHTIC, PDLCOM\*, PIRA, PROMT, RTECS\*, SPECINFO, TOXCENTER, TULSA, ULIDAT, USAN, USPAT2, USPATFULL, VETU, VTB

(\*File contains numerically searchable property data)

Other Sources: DSL\*\*, EINECS\*\*, TSCA\*\*

(\*\*Enter CHEMLIST File for up-to-date regulatory information)



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

68275 REFERENCES IN FILE CA (1962 TO DATE)

3501 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA

68366 REFERENCES IN FILE CAPLUS (1962 TO DATE)

2 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 137:362147

REFERENCE 2: 137:362002

REFERENCE 3: 137:361395

REFERENCE 4: 137:361387

REFERENCE 5: 137:360354

REFERENCE 6: 137:360271

REFERENCE 7: 137:359860

REFERENCE 8: 137:359406

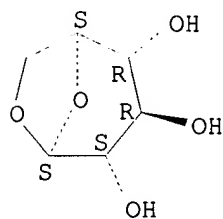
REFERENCE 9: 137:358242

REFERENCE 10: 137:358179

=> d ide can tot 191

L91 ANSWER 1 OF 5 REGISTRY COPYRIGHT 2002 ACS  
RN 181488-63-1 REGISTRY  
CN .beta.-L-Glucopyranose, 1,6-anhydro- (9CI) (CA INDEX NAME)  
FS STEREOSEARCH  
MF C6 H10 O5  
SR CA  
LC STN Files: CA, CAPLUS, TOXCENTER

Absolute stereochemistry.



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

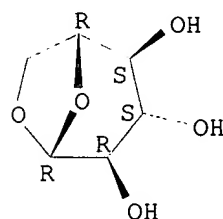
2 REFERENCES IN FILE CA (1962 TO DATE)  
2 REFERENCES IN FILE CAPLUS (1962 TO DATE)

REFERENCE 1: 128:205045

REFERENCE 2: 125:247436

L91 ANSWER 2 OF 5 REGISTRY COPYRIGHT 2002 ACS  
RN 107795-40-4 REGISTRY  
CN .beta.-Glucopyranose, 1,6-anhydro- (9CI) (CA INDEX NAME)  
OTHER CA INDEX NAMES:  
CN .beta.-DL-Glucopyranose, 1,6-anhydro-  
CN 6,8-Dioxabicyclo[3.2.1]octane, .beta.-DL-glucopyranose deriv.  
FS STEREOSEARCH  
MF C6 H10 O5  
SR CA  
LC STN Files: BEILSTEIN\*, CA, CAPLUS, CASREACT, CHEMINFORMRX  
(\*File contains numerically searchable property data)

Relative stereochemistry.



**\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\***

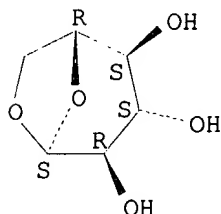
2 REFERENCES IN FILE CA (1962 TO DATE)  
2 REFERENCES IN FILE CAPLUS (1962 TO DATE)

REFERENCE 1: 132:266870

REFERENCE 2: 107:7464

L91 ANSWER 3 OF 5 REGISTRY COPYRIGHT 2002 ACS  
RN 13051-71-3 REGISTRY  
CN **Glucopyranose, 1,6-anhydro-, .alpha.-D- (8CI)** (CA INDEX NAME)  
FS STEREOSEARCH  
MF **C6 H10 O5**  
LC STN Files: BEILSTEIN\*, CAOLD, CHEMINFORMRX, GMELIN\*, SPECINFO  
(\*File contains numerically searchable property data)

Absolute stereochemistry.

**\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\***

1 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L91 ANSWER 4 OF 5 REGISTRY COPYRIGHT 2002 ACS  
RN 1310-73-2 REGISTRY  
CN Sodium hydroxide (Na(OH)) (9CI) (CA INDEX NAME)  
OTHER CA INDEX NAMES:  
CN **Sodium hydroxide (8CI)**  
OTHER NAMES:  
CN Aetznatron  
CN Ascarite  
CN Caustic soda  
CN Collo-Grillrein  
CN Collo-Tapetta  
CN GR  
CN GR (alkali reagent)  
CN Soda, caustic  
CN White caustic  
DR 8012-01-9  
MF H Na O  
CI COM  
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSCHEM, CSNB, DDFU, DETHERM\*, DIOGENES, DIPPR\*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, GMELIN\*, HSDB\*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK\*, MSDS-OHS, NIOSHTIC, PDLCOM\*, PIRA, PROMT, RTECS\*, SPECINFO, TOXCENTER, TULSA, ULIDAT, USAN, USPAT2, USPATFULL, VETU, VTB  
(\*File contains numerically searchable property data)  
Other Sources: DSL\*\*, EINECS\*\*, TSCA\*\*

(\*\*Enter CHEMLIST File for up-to-date regulatory information)

Na-OH

60610 REFERENCES IN FILE CA (1962 TO DATE)  
392 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
60682 REFERENCES IN FILE CAPLUS (1962 TO DATE)  
1 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 137:361798

REFERENCE 2: 137:360572

REFERENCE 3: 137:359480

REFERENCE 4: 137:359437

REFERENCE 5: 137:359331

REFERENCE 6: 137:358155

REFERENCE 7: 137:358067

REFERENCE 8: 137:358033

REFERENCE 9: 137:357908

REFERENCE 10: 137:357825

L91 ANSWER 5 OF 5 REGISTRY COPYRIGHT 2002 ACS

RN 498-07-7 REGISTRY

CN .beta.-D-Glucopyranose, 1,6-anhydro- (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN 6,8-Dioxabicyclo[3.2.1]octane, .beta.-D-glucopyranose deriv.

CN D-Glucose, 1,6-anhydro- (6CI)

CN Levoglucosan (8CI)

OTHER NAMES:

CN 1,6-Anhydro-.beta.-D-glucopyranose

CN 1,6-Anhydro-.beta.-D-glucose

CN 1,6-Anhydro-D-glucose

CN 1,6-Anhydroglucose

CN Leucoglucosan

FS STEREOSEARCH

DR 112602-30-9

MF C6 H10 O5

CI COM

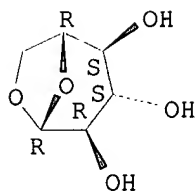
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CA, CAOLD, CAPLUS, CASREACT, CHEMCATS, CHEMINFORMRX, CHEMLIST, CSCHEM,  
DETERM\*, GMELIN\*, IFICDB, IFIPAT, IFIUDB, MEDLINE, MSDS-OHS, NIOSHTIC,  
PIRA, PROMT, SPECINFO, SYNTHLINE, TOXCENTER, USPATFULL

(\*File contains numerically searchable property data)

Other Sources: DSL\*\*, EINECS\*\*

(\*\*Enter CHEMLIST File for up-to-date regulatory information)

Absolute stereochemistry.



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP', FORMAT\*\*

747 REFERENCES IN FILE CA (1962 TO DATE)  
 24 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
 749 REFERENCES IN FILE CAPLUS (1962 TO DATE)  
 17 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 137:283339  
 REFERENCE 2: 137:279395  
 REFERENCE 3: 137:251794  
 REFERENCE 4: 137:201508  
 REFERENCE 5: 137:187209  
 REFERENCE 6: 137:142896  
 REFERENCE 7: 137:128796  
 REFERENCE 8: 137:113694  
 REFERENCE 9: 137:110673  
 REFERENCE 10: 137:95392

=> d ide can tot 192

L92 ANSWER 1 OF 2 REGISTRY COPYRIGHT 2002 ACS  
 RN 72270-30-5 REGISTRY  
 CN Cellulose, acetate hydrogen sulfate (9CI) (CA INDEX NAME)  
 MF C2 H4 O2 . x H2 O4 S . x Unspecified  
 PCT Manual registration  
 LC STN Files: CA, CAPLUS

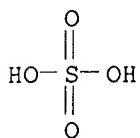
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CRN 9004-34-6  
 CMF Unspecified  
 CCI PMS, MAN

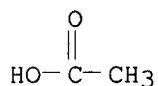
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CM 2

CRN 7664-93-9  
 CMF H2 O4 S



CM 3

CRN 64-19-7  
CMF C2 H4 O21 REFERENCES IN FILE CA (1962 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1962 TO DATE)

REFERENCE 1: 92:24539

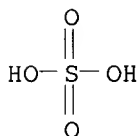
L92 ANSWER 2 OF 2 REGISTRY COPYRIGHT 2002 ACS  
RN 63310-04-3 REGISTRY  
CN Cellulose, acetate hydrogen sulfate, calcium salt (9CI) (CA INDEX NAME)  
MF C2 H4 O2 . x Ca . x H2 O4 S . x Unspecified  
PCT Manual registration  
LC STN Files: CA, CAPLUS

CM 1

CRN 9004-34-6  
CMF Unspecified  
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

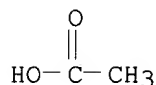
CM 2

CRN 7664-93-9  
CMF H2 O4 S

CM 3

CRN 64-19-7  
CMF C2 H4 O2





1 REFERENCES IN FILE CA (1962 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1962 TO DATE)

REFERENCE 1: 87:54844

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FILE 'HCAPLUS' ENTERED AT 13:19:03 ON 07 DEC 2002  
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FILE COVERS 1907 - 7 Dec 2002 VOL 137 ISS 24  
FILE LAST UPDATED: 6 Dec 2002 (20021206/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

CAS roles have been modified effective December 16, 2001. Please check your SDI profiles to see if they need to be revised. For information on CAS roles, enter HELP ROLES at an arrow prompt or use the CAS Roles thesaurus (/RL field) in this file.

=> d all tot 1100 hitstr

L100 ANSWER 1 OF 16 HCAPLUS COPYRIGHT 2002 ACS  
AN 2002:849768 HCAPLUS  
DN 137:339317  
TI Composition containing **cellulose sulfoacetate** and surfactant  
IN Fleury, Etienne; Harrison, Ian; Royer, Gaeelle; Doublier, Jean-Louis; **Saulnier, Luc**  
PA Rhodia Chimie, Fr.; Institut National de la Recherche Agronomique  
SO PCT Int. Appl., 22 pp.  
CODEN: PIXXD2  
DT Patent  
LA French  
IC ICM C11D003-22  
ICS C11D017-00; A61K007-48; A23L001-0534; D21H021-24; A61K047-38  
CC 46-3 (Surface Active Agents and Detergents)  
Section cross-reference(s): 19, 42, **43**, 51, 62, 63  
FAN.CNT 1  
PATENT NO. KIND DATE APPLICATION NO. DATE  
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PI WO 2002088288 A1 20021107 WO 2002-FR1429 20020425  
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,

CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,  
 GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,  
 LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,  
 PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ,  
 UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU,  
 TJ, TM  
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH,  
 CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR,  
 BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

FR 2824069 A1 20021031 FR 2001-5618 20010426

PRAI FR 2001-5618 A 20010426

- AB Thermoreversible and thixotropic hydrogels of surfactants that dissolve rapidly in water contain **cellulose sulfoacetate** and/or at least one of its derivs. These hydrogels are useful in cosmetic industry, detergent industry, food additives, paper industry, agrochem. industry, pharmaceutical industry, inks, and drilling fluids.
- ST **cellulose sulfoacetate** gelling agent surfactant; drilling fluid **cellulose sulfoacetate** surfactant hydrogel; ink **cellulose sulfoacetate** surfactant hydrogel; pharmaceutical **cellulose sulfoacetate** surfactant hydrogel; agrochem **cellulose sulfoacetate** surfactant hydrogel; paper industry **cellulose sulfoacetate** surfactant hydrogel; food **cellulose sulfoacetate** surfactant hydrogel; detergent **cellulose sulfoacetate** surfactant hydrogel; cosmetic **cellulose sulfoacetate** surfactant hydrogel
- IT Surfactants  
 (anionic; thermoreversible and thixotropic hydrogels contg. **cellulose sulfoacetate** and surfactant that dissolve rapidly in water)
- IT Surfactants  
 (nonionic; thermoreversible and thixotropic hydrogels contg. **cellulose sulfoacetate** and surfactant that dissolve rapidly in water)
- IT Gelation agents  
 Hydrogels  
 Thixotropic materials  
 (thermoreversible and thixotropic hydrogels contg. **cellulose sulfoacetate** and surfactant that dissolve rapidly in water)
- IT Agrochemicals  
 (thermoreversible and thixotropic hydrogels contg. **cellulose sulfoacetate** and surfactant that dissolve rapidly in water for agrochem. industry)
- IT Cosmetics  
 (thermoreversible and thixotropic hydrogels contg. **cellulose sulfoacetate** and surfactant that dissolve rapidly in water for cosmetics)
- IT Detergents  
 (thermoreversible and thixotropic hydrogels contg. **cellulose sulfoacetate** and surfactant that dissolve rapidly in water for detergents)
- IT Drilling fluids  
 (thermoreversible and thixotropic hydrogels contg. **cellulose sulfoacetate** and surfactant that dissolve rapidly in water for drilling fluids)
- IT Drugs  
 (thermoreversible and thixotropic hydrogels contg. **cellulose sulfoacetate** and surfactant that dissolve rapidly in water for drugs)
- IT Food additives  
 (thermoreversible and thixotropic hydrogels contg. **cellulose sulfoacetate** and surfactant that dissolve rapidly in water for food additives)

IT Inks  
(thermoreversible and thixotropic hydrogels contg. **cellulose sulfoacetate** and surfactant that dissolve rapidly in water for inks)

IT Paper  
(thermoreversible and thixotropic hydrogels contg. **cellulose sulfoacetate** and surfactant that dissolve rapidly in water for paper industry)

IT 9032-44-4P, Cellulose acetate sulfate  
RL: COS (Cosmetic use); FFD (Food or feed use); IMF (Industrial manufacture); TEM (Technical or engineered material use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(thermoreversible and thixotropic hydrogels contg. **cellulose sulfoacetate** and surfactant that dissolve rapidly in water)

IT 151-21-3, Sodium dodecyl sulfate, uses 9002-92-0, Polyethylene glycol monododecyl ether 25155-30-0, Sodium dodecylbenzenesulfonate  
RL: COS (Cosmetic use); FFD (Food or feed use); TEM (Technical or engineered material use); BIOL (Biological study); USES (Uses)  
(thermoreversible and thixotropic hydrogels contg. **cellulose sulfoacetate** and surfactant that dissolve rapidly in water)

RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Diehl, F; US 3794605 A 1974 HCAPLUS  
(2) Hill, E; US 3184421 A 1965 HCAPLUS  
(3) Inst Nat Rech Agronomique; FR 2789080 A 2000 HCAPLUS  
(4) Sakai, T; US 3994827 A 1976 HCAPLUS  
(5) Salamone, J; US 4321261 A 1982 HCAPLUS  
(6) Touey, G; US 3236779 A 1966 HCAPLUS  
(7) Unilever; WO 9942548 A 1999 HCAPLUS

IT 9032-44-4P, Cellulose acetate sulfate  
RL: COS (Cosmetic use); FFD (Food or feed use); IMF (Industrial manufacture); TEM (Technical or engineered material use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(thermoreversible and thixotropic hydrogels contg. **cellulose sulfoacetate** and surfactant that dissolve rapidly in water)

RN 9032-44-4 HCAPLUS

CN Cellulose, acetate sulfate (9CI) (CA INDEX NAME)

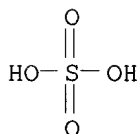
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CRN 9004-34-6  
CMF Unspecified  
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

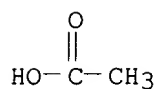
CRN 7664-93-9  
CMF H2 O4 S



CM 3

CRN 64-19-7

CMF C2 H4 O2



L100 ANSWER 2 OF 16 HCAPLUS COPYRIGHT 2002 ACS

AN 2002:491761 HCAPLUS

DN 137:339217

TI Purification of water-soluble **cellulose sulfoacetate** salts

IN Shishova, I. I.; Pyatakina, N. K.; Bon, A. I.; Zhil'tsova, I. A.; Solodikhin, N. I.; Gorlova, G. L.

PA Russia

SO Russ., No pp. given  
CODEN: RUXXE7

DT Patent

LA Russian

IC ICM C08B003-06

ICS B01D061-00

CC 43-3 (**Cellulose**, Lignin, Paper, and Other Wood Products)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	RU 2171812	C2	20010810	RU 1998-120318	19981112
AB	The title salts produced by sulfation of partially saponified <b>cellulose acetate</b> with <b>H2SO4</b> and neutralization are subjected to mech. filtration followed by membrane filtration (diafiltration) to remove low-mol.-wt. components and byproducts, and concn. of purified solns. The polymer membranes having selectivity 97-99% for proteins with mol. wt. 20000 are used and the process is conducted at 20-25.degree. and pressure 0.1-0.7 MPa.				
ST	<b>cellulose sulfate acetate</b> salt purifn				
	membrane filtration; diafiltration <b>cellulose sulfate acetate</b> salt purifn				
IT	Ultrafiltration				
	(diafiltration; purifn. of water-sol. <b>cellulose sulfoacetate</b> salts by)				
IT	9004-35-7, UAM				
	RL: NUU (Other use, unclassified); USES (Uses)				
	(membrane, UAM 200; purifn. of water-sol. <b>cellulose sulfoacetate</b> salts by ultrafiltration)				
IT	124587-23-1, UPM				
	RL: NUU (Other use, unclassified); USES (Uses)				
	(purifn. of water-sol. <b>cellulose sulfoacetate</b> salts by ultrafiltration)				
IT	9032-44-4DP, <b>Cellulose acetate sulfate</b>				
	, salts 145268-50-4P, Sodium <b>cellulose sulfoacetate</b> 474043-89-5P, Potassium <b>cellulose sulfoacetate</b> 474043-90-8P, Barium <b>cellulose sulfoacetate</b>				
	RL: PUR (Purification or recovery); PREP (Preparation)				
	(purifn. of water-sol. <b>cellulose sulfoacetate</b> salts by ultrafiltration)				
IT	9032-44-4DP, <b>Cellulose acetate sulfate</b>				
	, salts 145268-50-4P, Sodium <b>cellulose sulfoacetate</b> 474043-89-5P, Potassium <b>cellulose sulfoacetate</b> 474043-90-8P, Barium <b>cellulose sulfoacetate</b>				
	RL: PUR (Purification or recovery); PREP (Preparation)				

(purifn. of water-sol. **cellulose sulfoacetate** salts  
by ultrafiltration)

RN 9032-44-4 HCAPLUS

CN Cellulose, acetate sulfate (9CI) (CA INDEX NAME)

CM 1

CRN 9004-34-6

CMF Unspecified

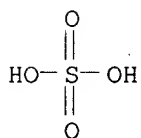
CCI PMS, MAN

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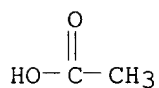
CMF H2 O4 S



CM 3

CRN 64-19-7

CMF C2 H4 O2



RN 145268-50-4 HCAPLUS

CN Cellulose, sulfoacetate, sodium salt (9CI) (CA INDEX NAME)

CM 1

CRN 9004-34-6

CMF Unspecified

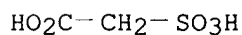
CCI PMS, MAN

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CM 2

CRN 123-43-3

CMF C2 H4 O5 S



RN 474043-89-5 HCAPLUS

CN Cellulose, sulfoacetate, potassium salt (9CI) (CA INDEX NAME)

CM 1

CRN 9004-34-6  
CMF Unspecified  
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 123-43-3  
CMF C2 H4 O5 S

HO<sub>2</sub>C-CH<sub>2</sub>-SO<sub>3</sub>H

RN 474043-90-8 HCAPLUS  
CN Cellulose, sulfoacetate, barium salt (9CI) (CA INDEX NAME)

CM 1

CRN 9004-34-6  
CMF Unspecified  
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 123-43-3  
CMF C2 H4 O5 S

HO<sub>2</sub>C-CH<sub>2</sub>-SO<sub>3</sub>H

L100 ANSWER 3 OF 16 HCAPLUS COPYRIGHT 2002 ACS

AN 2000:535182 HCAPLUS

DN 133:137001

TI Method for producing cellulose sulfoacetate derivatives and products and mixtures thereof

IN Chauvelon, Gaelle; Saulnier, Luc; Buleon, Alain; Thibault, Jean-Francois

PA Institut National de la Recherche Agronomique (INRA), Fr.

SO PCT Int. Appl., 26 pp.

CODEN: PIXXD2

DT Patent

LA French

IC ICM C08B007-00

ICS C08B003-06

CC 43-3 (Cellulose, Lignin, Paper, and Other Wood Products)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000044791	A1	20000803	WO 2000-FR205	20000128
W:	AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW:	GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF,				

CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG  
 FR 2789080 A1 20000804 FR 1999-1049 19990129  
 FR 2789080 B1 20010420  
 EP 1165618 A1 20020102 EP 2000-901672 20000128  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
 IE, SI, LT, LV, FI, RO  
 BR 2000007802 A 20020205 BR 2000-7802 20000128  
 PRAI FR 1999-1049 A 19990129  
 WO 2000-FR205 W 20000128  
 AB A method for directly producing a mixt. of **cellulose sulfoacetate** derivs. by esterification of cellulosic material, is characterized in that it comprises the following steps: i) the cellulosic material is suspended in a **glacial acetic acid** soln. and the excess **acetic acid** is eliminated, ii) the cellulosic acid that is swollen with **acetic acid** is suspended in a **sulfuric acid** soln. in **glacial acetic acid**, and iii) the **cellulose** material is made to react by adding **acetic anhydride**. This process provides products with controlled acetylation degree, sulfation 0.2-0.6, controlled d.p., good soly. in polar solvents, good rheol. properties., and retention of water in presence of salt.  
 ST **cellulose acetate sulfate** manuf  
 IT Gels  
 (producing **cellulose sulfoacetate** deriv.  
 thermoreversible gels)  
 IT 9032-44-4P, **Cellulose acetate sulfate**  
 51910-28-2P, Sodium **cellulose acetate**  
**sulfate** 286942-63-0P, Potassium **cellulose**  
**acetate sulfate**  
 RL: IMF (Industrial manufacture); PRP (Properties); PREP  
 (Preparation)  
 (producing **cellulose sulfoacetate** derivs.)  
 RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 RE  
 (1) Aikhodzhaev, B; VYSOKOMOL SOEDIN, SER A 1982, V24(6), P1317 HCAPLUS  
 (2) Anon; 1982, 10, HCAPLUS  
 (3) Eastman Kodak Company; GB 1177480 A 1970 HCAPLUS  
 (4) Hiatt, G; US 3075962 A 1963 HCAPLUS  
 (5) Hiatt, G; US 3075963 A 1963 HCAPLUS  
 (6) Ott; "cellulose and cellulose derivatives part II", Chapter IX 1963, P775  
 IT 9032-44-4P, **Cellulose acetate sulfate**  
 51910-28-2P, Sodium **cellulose acetate**  
**sulfate** 286942-63-0P, Potassium **cellulose**  
**acetate sulfate**  
 RL: IMF (Industrial manufacture); PRP (Properties); PREP  
 (Preparation)  
 (producing **cellulose sulfoacetate** derivs.)  
 RN 9032-44-4 HCAPLUS  
 CN Cellulose, acetate sulfate (9CI) (CA INDEX NAME)

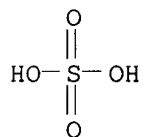
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CRN 9004-34-6  
 CMF Unspecified  
 CCI PMS, MAN

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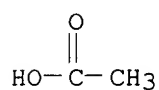
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CRN 7664-93-9  
 CMF H2 O4 S



CM 3

CRN 64-19-7  
CMF C2 H4 O2



RN 51910-28-2 HCAPLUS  
CN Cellulose, acetate hydrogen sulfate, sodium salt (9CI) (CA INDEX NAME)

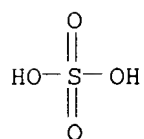
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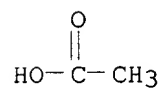
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CRN 7664-93-9  
CMF H2 O4 S



CM 3

CRN 64-19-7  
CMF C2 H4 O2



RN 286942-63-0 HCAPLUS  
CN Cellulose, acetate hydrogen sulfate, potassium salt (9CI) (CA INDEX NAME)

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CRN 9004-34-6

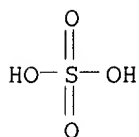


CMF Unspecified  
CCI PMS, MAN

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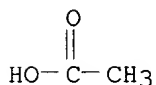
CM 2

CRN 7664-93-9  
CMF H2 O4 S



CM 3

CRN 64-19-7  
CMF C2 H4 O2



L100 ANSWER 4 OF 16 HCAPLUS COPYRIGHT 2002 ACS

AN 1996:367329 HCAPLUS

DN 125:36155

TI Manufacture of **cellulose acetate** phosphate and  
**cellulose acetate sulfate** with definite  
molecular structure and their use in product of **cellulose**  
phosphate and **cellulose sulfate**

IN Wagenknecht, Wolfgang

PA Fraunhofer-Gesellschaft zur Foerderung der Angewandten Forschung e.V.,  
Germany

SO Ger., 7 pp.  
CODEN: GWXXAW

DT Patent

LA German

IC ICM C08B007-00

ICS C08B005-00; C08B005-14

CC 43-3 (**Cellulose**, Lignin, Paper, and Other Wood Products)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 4435082	C1	19960418	DE 1994-4435082	19940930

OS MARPAT 125:36155

AB The title mixed esters with phosphate or **sulfate** groups in the  
C2, C3, and C6 position are manufd. by deacetylation of **cellulose**  
triacetate (I) 0.5-72 h at 20-100.degree. with an amine in an aprotic  
solvent and phosphorylation/sulfation. Thus, reaction of I [acetylation  
degree (DSac) 2.90, OAc group distribution C1 = 1, C3 = 1, C6 = 0.9] with  
Me2NH in aq. DMSO 20 h at 80.degree. gave a product with DSac 0.85, C2 =  
0.05, C3 = 0.15, C6 = 0.7, which was phosphorylated 6 h at 120.degree. with  
polyphosphoric acid in DMF in the presence of Bu3N and washed with EtOH  
contg. 4% NaOH and 8% water to give Na **cellulose**  
**acetate** phosphate with DSac 0.83 and phosphorylation degree (DSp)

1.20, which was deacetylated by treatment with EtOH contg. 4% NaOH and 8% water to give Na **cellulose** phosphate with DSp 0.96 and C2/C3 = 0.77 and C6 = 0.19.

- ST amine deacetylation **cellulose** triacetate; aprotic solvent deacetylation **cellulose** triacetate; phosphate **cellulose acetate** manuf; **sulfate cellulose acetate** manuf
- IT Amines, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(deacetylation agents; manuf. of **cellulose acetate** phosphate and **cellulose acetate sulfate** with definite mol. structure and their use in product of **cellulose** phosphate and **cellulose sulfate**)
- IT Deacetylation  
(manuf. of **cellulose acetate** phosphate and **cellulose acetate sulfate** with definite mol. structure and their use in product of **cellulose** phosphate and **cellulose sulfate**)
- IT Amines, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(di-, deacetylation agents; manuf. of **cellulose acetate** phosphate and **cellulose acetate sulfate** with definite mol. structure and their use in product of **cellulose** phosphate and **cellulose sulfate**)
- IT Amines, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(secondary, deacetylation agents; manuf. of **cellulose acetate** phosphate and **cellulose acetate sulfate** with definite mol. structure and their use in product of **cellulose** phosphate and **cellulose sulfate**)
- IT 111-26-2, 1-Hexanamine 124-09-4, 1,6-Hexanediamine, reactions  
124-40-3, Dimethylamine, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(deacetylation agent; manuf. of **cellulose acetate** phosphate and **cellulose acetate sulfate** with definite mol. structure and their use in product of **cellulose** phosphate and **cellulose sulfate**)
- IT 9004-35-7P, **Cellulose acetate**  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(intermediate; manuf. of **cellulose acetate** phosphate and **cellulose acetate sulfate** with definite mol. structure and their use in product of **cellulose** phosphate and **cellulose sulfate**)
- IT 9005-22-5P, Sodium **cellulose sulfate** 9038-41-9P, Sodium **cellulose** phosphate  
RL: IMF (Industrial manufacture); PREP (Preparation)  
(manuf. of **cellulose acetate** phosphate and **cellulose acetate sulfate** with definite mol. structure and their use in product of **cellulose** phosphate and **cellulose sulfate**)
- IT 51910-28-2P, Sodium **cellulose acetate sulfate** 177931-55-4P, Sodium **cellulose acetate** phosphate 177931-56-5P  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(manuf. of **cellulose acetate** phosphate and **cellulose acetate sulfate** with definite mol. structure and their use in product of **cellulose** phosphate and **cellulose sulfate**)
- IT 9012-09-3, **Cellulose** triacetate

RL: RCT (Reactant); RACT (Reactant or reagent)  
 (manuf. of **cellulose acetate** phosphate and  
**cellulose acetate sulfate** with definite  
 mol. structure and their use in product of **cellulose**  
 phosphate and **cellulose sulfate**)

IT 67-68-5, DMSO, uses

RL: NUU (Other use, unclassified); USES (Uses)  
 (solvent; manuf. of **cellulose acetate** phosphate and  
**cellulose acetate sulfate** with definite  
 mol. structure and their use in product of **cellulose**  
 phosphate and **cellulose sulfate**)

IT 51910-28-2P, Sodium **cellulose acetate**  
**sulfate 177931-56-5P**

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (manuf. of **cellulose acetate** phosphate and  
**cellulose acetate sulfate** with definite  
 mol. structure and their use in product of **cellulose**  
 phosphate and **cellulose sulfate**)

RN 51910-28-2 HCAPLUS

CN Cellulose, acetate hydrogen sulfate, sodium salt (9CI) (CA INDEX NAME)

CM 1

CRN 9004-34-6

CMF Unspecified

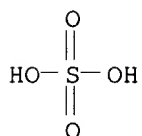
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 7664-93-9

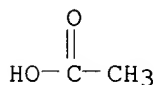
CMF H2 O4 S



CM 3

CRN 64-19-7

CMF C2 H4 O2



RN 177931-56-5 HCAPLUS

CN Cellulose, acetate hydrogen sulfate, ammonium salt (9CI) (CA INDEX NAME)

CM 1

CRN 9004-34-6

CMF Unspecified

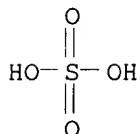
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 7664-93-9

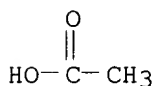
CMF H2 O4 S



CM 3

CRN 64-19-7

CMF C2 H4 O2



L100 ANSWER 5 OF 16 HCAPLUS COPYRIGHT 2002 ACS

AN 1995:781865 HCAPLUS

DN 123:173199

TI Semipermeable **cellulose acetate sulfate**  
membrane

IN Shishova, Irina I.; Bon, Aleksandr I.; Mironova, Lyubov V.; Zhiltsova,  
Irina A.; Pyatakina, Nina K.; Galtseva, Olga V.

PA Russia

SO Russ.

From: Izobreteniya 1994, (13), 31.

CODEN: RUXXE7

DT Patent

LA Russian

IC ICM B01D071-16

CC 43-3 (**Cellulose**, Lignin, Paper, and Other Wood Products)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	---	-----	-----	-----
PI	RU 2015725	C1	19940715	RU 1992-5055062	19920716
PRAI	SU 1992-5055062		19920716		

AB Title only translated.

ST semipermeable membrane **cellulose ester**

IT Membranes

(semipermeable, **cellulose acetate sulfate**  
solns. for prepn. of)

IT 9032-44-4, **Cellulose acetate sulfate**

RL: PEP (Physical, engineering or chemical process); TEM (Technical or  
engineered material use); PROC (Process); USES (Uses)

(semipermeable membranes from solns. of)

IT 9032-44-4, **Cellulose acetate sulfate**

RL: PEP (Physical, engineering or chemical process); TEM (Technical or  
engineered material use); PROC (Process); USES (Uses)

(semipermeable membranes from solns. of)

RN 9032-44-4 HCAPLUS

CN Cellulose, acetate sulfite (9CI) (CA INDEX NAME)

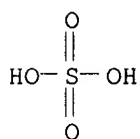
CM 1

CRN 9004-34-6  
CMF Unspecified  
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

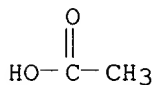
CM 2

CRN 7664-93-9  
CMF H2 O4 S



CM 3

CRN 64-19-7  
CMF C2 H4 O2



L100 ANSWER 6 OF 16 HCAPLUS COPYRIGHT 2002 ACS

AN 1994:273335 HCAPLUS

DN 120:273335

TI Preparation, properties and application of **cellulose acetate sulfite**

AU Pyatakina, N. K.; Kryazhev, V. N.

CS USSR

SO Khimiya i Tekhnologiya Efirov Tsellyulozy, NPO "Polimersintez", M. (1991) 94-103

From: Ref. Zh., Khim. 1992, Abstr. No. 12F38 *check*.

DT Journal

LA Russian

CC 43-3 (**Cellulose**, Lignin, Paper, and Other Wood Products)

AB Title only translated.

ST **sulfite acetate cellulose** property application; **acetate sulfite cellulose** prepn

IT **9032-44-4DP, Cellulose acetate sulfite**, derivs.

RL: PREP (Preparation)

(prepn. and properties and use of)

IT **9032-44-4DP, Cellulose acetate sulfite**, derivs.

RL: PREP (Preparation)

(prepn. and properties and use of)

RN 9032-44-4 HCAPLUS

CN Cellulose, acetate sulfite (9CI) (CA INDEX NAME)

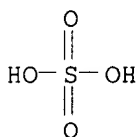
CM 1

CRN 9004-34-6  
 CMF Unspecified  
 CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

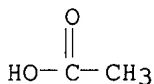
CM 2

CRN 7664-93-9  
 CMF H2 O4 S



CM 3

CRN 64-19-7  
 CMF C2 H4 O2



L100 ANSWER 7 OF 16 HCAPLUS COPYRIGHT 2002 ACS

AN 1992:492506 HCAPLUS

DN 117:92506

TI Preparation of **cellulose (acetate) sulfate**  
 free of foreign salts

IN Wagenknecht, Wolfgang; Ludwig, Juergen; Philipp, Burkart; Walenta, Katja;  
 Gensrich, Juergen; Paul, Dieter; Schnabelrauch, Mathias; Radig, Wolfram;  
 Boehme, Gottfried; et al.

PA Institut fuer Polymerenchemie, Germany

SO Ger. (East), 5 pp.

CODEN: GEXXA8

DT Patent

LA German

IC ICM C08B007-00

ICS C08B005-14

CC 43-3 (**Cellulose**, Lignin, Paper, and Other Wood Products)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DD 298790	A5	19920312	DD 1989-336317	19891227 <i>check.</i>

AB The title esters are prepd. by sulfation of **cellulose acetate** (I) in DMF, esterification of **cellulose** with **H2SO4-Ac2O**, or deacetylation, with purifn. under specified conditions. Adding 600 mL ClSO3H in 4 L DMF over 15 min to 2 kg I [degree of substitution (DS) 2.3] in 15 L DMF stirred at .ltoreq.25.degree., stirring at 20.degree. for 2 h, adding 5 kg NaOAc, 12.5 L H2O, and 3 L DMF to give a pH of 6, stirring 30 min, pouring the soln. into 80 L 5% aq. NaOAc, stirring 1 h, washing 3 times with 5% NaOAc and 3 times with EtOH, and drying at 40.degree. in vacuo gave

cellulose acetate sulfate (DS 2.3 and 0.4, resp.) which  
 was free of foreign salts and highly swellable by water.  
 ST acetate sulfate cellulose salt free;  
 sulfation cellulose acetate DMF  
 IT 9032-43-3P, Cellulose sulfate 9032-44-4P,  
 Cellulose acetate sulfate  
 RL: PREP (Preparation)  
 (manuf. of salt-free)  
 IT 9032-44-4P, Cellulose acetate sulfate  
 RL: PREP (Preparation)  
 (manuf. of salt-free)  
 RN 9032-44-4 HCAPLUS  
 CN Cellulose, acetate sulfate (9CI) (CA INDEX NAME)

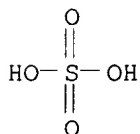
CM 1

CRN 9004-34-6  
 CMF Unspecified  
 CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

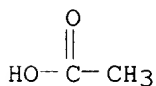
CM 2

CRN 7664-93-9  
 CMF H2 O4 S



CM 3

CRN 64-19-7  
 CMF C2 H4 O2



L100 ANSWER 8 OF 16 HCAPLUS COPYRIGHT 2002 ACS  
 AN 1990:480742 HCAPLUS  
 DN 113:80742  
 TI Preparation of soluble cellulose phosphate and sulfate esters in  
 nonaqueous systems  
 AU Philipp, Burkart; Wagenknecht, Wolfgang; Nehls, Irene; Schnabelrauch,  
 Matthias; Klemm, Dieter  
 CS Inst. Polymerenchem. "Erich Correns", Akad. Wiss. DDR, Teltow-Seehof,  
 DDR-1530, Ger. Dem. Rep.  
 SO Papier (Bingen, Germany) (1989), 43(12), 700-6  
 CODEN: PAERAY; ISSN: 0031-1340  
 DT Journal  
 LA German  
 CC 43-3 (Cellulose, Lignin, Paper, and Other Wood Products)  
 AB Prepn. of cellulose phosphates and sulfates from derived and

underived **cellulose** and the effects of the acylating agent on esterification is studied and discussed. In prepn. of anionic water-sol. **cellulose** phosphates and sulfates, synthesis via nonstable intermediates was more successful than direct acylation of underived forms. In sulfation with SO<sub>3</sub> in N<sub>2</sub>O<sub>4</sub>/DMF, transesterification as well as direct acylation of free OH groups occurred. In phosphorylation in a nitrite system and sulfation of partially substituted **cellulose**, no evidence for transesterification was obsd. The regioselectivity was affected by the acylating agent, i.e., in sulfation with NOSO<sub>4</sub>H as well as SO<sub>2</sub>, sulfation occurred mainly in the C-6 position, but using SO<sub>3</sub> and an excess of water resulted in a strong shift to C-2/C-3 substitution.

ST phosphate **cellulose** prepn esterification; sulfate **cellulose** prepn esterification; transesterification **cellulose** phosphate sulfate prepn; regioselectivity **cellulose** phosphate sulfate prepn

IT Chains, chemical  
(structure of, of **cellulose** phosphate and sulfate, regioselectivity and acylating agent in relation to)

IT 9004-35-7  
RL: USES (Uses)  
(esterification and transesterification of, in **cellulose** sulfate prepn.)

IT 10025-87-3, Phosphoryl chloride  
RL: USES (Uses)  
(esterification of **cellulose** with, regioselectivity in relation to)

IT 7446-11-9, Sulfur trioxide, reactions 7790-94-5, Chlorosulfuric acid 7791-25-5, Sulfonyl dichloride  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(esterification of **cellulose** with, regioselectivity in relation to)

IT 9032-44-4P, **Cellulose acetate sulfate**  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and NMR spectra of)

IT 9015-14-9P, **Cellulose phosphate** 9032-43-3P, **Cellulose sulfate**  
RL: PREP (Preparation)  
(prepn. of, regioselectivity in, acylating agent effect on)

IT 9004-34-6, **Cellulose**, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(sulfation and phosphorylation of, regioselectivity in, acylation agent effect on)

IT 9032-44-4P, **Cellulose acetate sulfate**  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and NMR spectra of)

RN 9032-44-4 HCAPLUS

CN Cellulose, acetate sulfate (9CI) (CA INDEX NAME)

CM 1

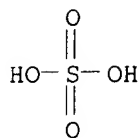
CRN 9004-34-6  
CMF Unspecified  
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

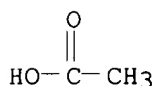
CRN 7664-93-9  
CMF H2 O4 S





CM 3

CRN 64-19-7  
CMF C2 H4 O2



IT 9004-34-6, Cellulose, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (sulfation and phosphorylation of, regioselectivity in, acylation agent effect on)  
 RN 9004-34-6 HCAPLUS  
 CN Cellulose (8CI, 9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

L100 ANSWER 9 OF 16 HCAPLUS COPYRIGHT 2002 ACS

AN 1987:178284 HCAPLUS

DN 106:178284

TI Homogeneous synthesis of **cellulose** esters in nonaqueous solutions. 1. Esterification of **cellulose** dissolved in dimethylformamide-dinitrogen tetroxide mixtures

AU Grinshpan, D. D.; Emel'yanov, Yu. G.; Kaputskii, F. H.

CS Beloruss. Gos. Univ., Minsk, USSR

SO Koksnes Kimija (1987), (1), 30-5

CODEN: KHDRDQ; ISSN: 0201-7474

DT Journal

LA Russian

CC 43-3 (Cellulose, Lignin, Paper, and Other Wood Products)

AB Esterification of **cellulose** (I) [9004-34-6] dissolved in DMF [68-12-2]-N2O4 mixt. proceeded slowly and to low substitution degrees, apparently due to blocking of OH groups of I by N2O4. The reaction rate and substitution degree increased on addn. of substances capable of interactions with N2O4. By choosing proper reaction conditions, simple or mixed esters of I with varying substitution degree can be obtained.

ST esterification **cellulose** DMF dinitrogen tetroxide; nitrogen oxide DMF esterification **cellulose**

IT Amides, uses and miscellaneous

RL: USES (Uses)

(**cellulose** esterification in DMF-dinitrogen tetroxide mixt. in presence of)

IT Esterification catalysts

(for **cellulose** in DMF-dinitrogen tetroxide mixt.)

IT 10544-72-6, Dinitrogen tetroxide

RL: USES (Uses)

(DMF mixt., **cellulose** esterification in)

IT 108-24-7, Acetic anhydride 110-86-1, Pyridine, uses and miscellaneous 7664-93-9, Sulfuric acid, uses and miscellaneous

RL: CAT (Catalyst use); USES (Uses)  
(catalysts, for **cellulose** esterification in DMF-dinitrogen tetroxide mixt.)

IT 55-21-0, Benzamide 57-13-6, Urea, uses and miscellaneous 60-35-5, Acetamide, uses and miscellaneous 88-97-1, Phthalic acid monoamide 619-80-7, 4-Nitrobenzamide 638-32-4, Succinic acid monoamide 5329-14-6, Sulfamic acid 13765-36-1, Sulfamic acid ammonium salt 107990-50-1

RL: USES (Uses)  
(**cellulose** esterification in DMF-dinitrogen tetroxide mixt. in presence of)

IT 68-12-2, uses and miscellaneous

RL: USES (Uses)  
(dinitrogen tetroxide mixt., **cellulose** esterification in)

IT 9004-34-6, **Cellulose**, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)  
(esterification of, in DMF-dinitrogen tetroxide mixt.)

IT 9004-35-7P, **Cellulose acetate** 9004-44-8P, **Cellulose** phthalate 9004-70-0P, **Cellulose** nitrate 9015-14-9P, **Cellulose** phosphate 9032-43-3P, **Cellulose** sulfate 9032-44-4P, **Cellulose acetate** sulfate 9032-47-7P, **Cellulose** benzoate 9032-48-8P, **Cellulose acetate** nitrate 9062-25-3P, **Cellulose** 4-nitrobenzoate 57126-19-9P, **Cellulose** succinate 57126-98-4P 62930-93-2P, **Cellulose acetate** benzoate 107852-17-5P 107852-18-6P

RL: PREP (Preparation)  
(prepn. of, in DMF-dinitrogen tetroxide mixt.)

IT 108-24-7, **Acetic anhydride** 7664-93-9, **Sulfuric acid**, uses and miscellaneous

RL: CAT (Catalyst use); USES (Uses)  
(catalysts, for **cellulose** esterification in DMF-dinitrogen tetroxide mixt.)

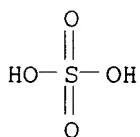
RN 108-24-7 HCAPLUS

CN Acetic acid, anhydride (9CI) (CA INDEX NAME)

Ac-O-Ac

RN 7664-93-9 HCAPLUS

CN Sulfuric acid (8CI, 9CI) (CA INDEX NAME)



IT 9004-34-6, **Cellulose**, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)  
(esterification of, in DMF-dinitrogen tetroxide mixt.)

RN 9004-34-6 HCAPLUS

CN Cellulose (8CI, 9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

IT 9032-44-4P, **Cellulose acetate sulfate**

RL: PREP (Preparation)  
(prepn. of, in DMF-dinitrogen tetroxide mixt.)

RN 9032-44-4 HCAPLUS

CN Cellulose, acetate sulfate (9CI) (CA INDEX NAME)

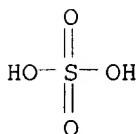
CM 1

CRN 9004-34-6  
 CMF Unspecified  
 CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

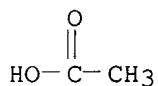
CM 2

CRN 7664-93-9  
 CMF H2 O4 S



CM 3

CRN 64-19-7  
 CMF C2 H4 O2



L100 ANSWER 10 OF 16 HCAPLUS COPYRIGHT 2002 ACS

AN 1980:43464 HCAPLUS

DN 92:43464

TI Rapid hydrolysis of **celluloses** in homogeneous solution

AU Garves, Klaus

CS Inst. Wood Chem. Chem. Technol. Wood, Fed. Res. Cent. For. Forest Prod., Hamburg, 2050, Fed. Rep. Ger.

SO Advances in Chemistry Series (1979), Volume Date 1978, 181 (Hydrolysis Cellul.: Mech. Enzym. Acid Catal.), 159-65

CODEN: ADCSAJ; ISSN: 0065-2393

DT Journal

LA English

CC 43-2 (**Cellulose**, Lignin, Paper, and Other Wood Products)AB Dissoln. of **cellulose** (I) [9004-34-6], cotton, and

cotton linters in a mixt. of AcOH, Ac2O, H2SO4

, and DMF at 120-60.degree. resulted in rapid and complete hydrolysis of I with decompn. of the **cellulose acetate sulfate** formed by gradual addn. of aq. acid. Highly cryst. I is quickly decompd. to glucose with min. byproduct formation. Carbohydrate products contg. sugar units other than glucose, are hydrolyzed with destruction of monosaccharides.

ST cotton hydrolysis **sulfuric acid** DMF; **acetic acid** DMF hydrolysis **cellulose**; linter homogeneous hydrolysis acid soln

IT Cotton

Linters

(hydrolysis of, in DMF contg. **acetic acid** and **sulfuric acid**, homogeneous)

IT Hydrolysis  
 (of **cellulose**, by DMF contg. **acetic acid**  
 and **sulfuric acid**, homogeneous)

IT 9032-44-4P  
 RL: FORM (Formation, nonpreparative); PREP (Preparation)  
 (formation of, in homogeneous hydrolysis of **cellulose** by DMF  
 contg. **acetic acid** and **sulfuric acid**)

IT 108-24-7 7601-90-3, reactions 7664-93-9, reactions  
 RL: USES (Uses)  
 (hydrolysis by DMF and **acetic acid** and, of  
**cellulose**)

IT 64-19-7, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (hydrolysis by DMF and **sulfuric acid** and, of  
**cellulose**)

IT 75-12-7, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (hydrolysis by **acetic acid** and **sulfuric acid** and, of cotton)

IT 9004-34-6, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (hydrolysis of, in DMF contg. **acetic acid** and  
**sulfuric acid**, homogeneous)

IT 9032-44-4P  
 RL: FORM (Formation, nonpreparative); PREP (Preparation)  
 (formation of, in homogeneous hydrolysis of **cellulose** by DMF  
 contg. **acetic acid** and **sulfuric acid**)

RN 9032-44-4 HCAPLUS  
 CN Cellulose, acetate sulfate (9CI) (CA INDEX NAME)

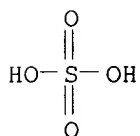
CM 1

CRN 9004-34-6  
 CMF Unspecified  
 CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

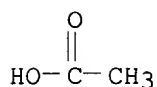
CM 2

CRN 7664-93-9  
 CMF H2 O4 S

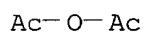


CM 3

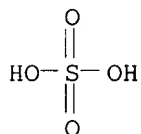
CRN 64-19-7  
 CMF C2 H4 O2



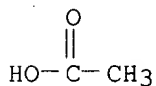
IT 108-24-7 7664-93-9, reactions  
 RL: USES (Uses)  
 (hydrolysis by DMF and **acetic acid** and, of  
**cellulose**)  
 RN 108-24-7 HCAPLUS  
 CN Acetic acid, anhydride (9CI) (CA INDEX NAME)



RN 7664-93-9 HCAPLUS  
 CN Sulfuric acid (8CI, 9CI) (CA INDEX NAME)




IT 64-19-7, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (hydrolysis by DMF and **sulfuric acid** and, of  
**cellulose**)  
 RN 64-19-7 HCAPLUS  
 CN Acetic acid (7CI, 8CI, 9CI) (CA INDEX NAME)



IT 9004-34-6, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (hydrolysis of, in DMF contg. **acetic acid** and  
**sulfuric acid**, homogeneous)  
 RN 9004-34-6 HCAPLUS  
 CN Cellulose (8CI, 9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

L100 ANSWER 11 OF 16 HCAPLUS COPYRIGHT 2002 ACS  
 AN 1977:108283 HCAPLUS  
 DN 86:108283  
 TI Alkali **cellulose** ester sulfates  
 IN Tunc, Deger C.  
 PA Johnson and Johnson, USA  
 SO U.S., 9 pp. Division of U.S. 3,897,782.   
 CODEN: USXXAM  
 DT Patent  
 LA English  
 IC C08B007-00  
 NCL 536059000  
 CC 43-3 (**Cellulose**, Lignin, Paper, and Other Wood Products)

FAN.CNT 2

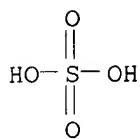
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PI	US 4005251	A	19770125	US 1975-551570	19750220
	US 3897782	A	19750805	US 1974-431455	19740107
	NO 7404492	A	19750708	NO 1974-4492	19741212
	DK 7406625	A	19750825	DK 1974-6625	19741218
	AU 7476730	A1	19760624	AU 1974-76730	19741220
	SE 7500061	A	19750708	SE 1975-61	19750103
	FI 7500016	A	19750708	FI 1975-16	19750106
	FR 2256748	A1	19750801	FR 1975-253	19750106
	BE 824174	A1	19750707	BE 1975-152206	19750107
	NL 7500174	A	19750709	NL 1975-174	19750107
	ZA 7500128	A	19760825	ZA 1975-128	19750107
	NO 7503401	A	19750708	NO 1975-3401	19751008
PRAI	US 1974-431455		19740107		
	NO 1974-4492		19741212		
AB	Sulfating <b>cellulose</b> pulp with a mixt. contg. <b>AcOH</b> , <b>Ac2O</b> , <b>Na2SO4</b> , and <b>H2SO4</b> , acetylating with <b>Ac2O</b> , and pptg. in aq. <b>NaOH</b> soln. gave sodium <b>cellulose</b> <b>acetate sulfate</b> (I) [51910-28-2] with 0.1-0.45 and 1.63-2.69 <b>sulfate</b> and <b>Ac</b> substitution degree (SD), resp., useful for manuf. of barrier films for body exudates. Thus, a mixt. of <b>Ac2O</b> 162.9, <b>AcOH</b> 52.5, <b>Na2SO4</b> 30.8, and 98% <b>H2SO4</b> 20.15 g was added to a slurry of 400 g pulp in 2000 g <b>AcOH</b> , stirred for 30 min at <32.degree., and treated with 112.0 g <b>H2SO4</b> to give sulfated pulp, which was treated with 1080 g <b>Ac2O</b> , stirred for 2 h at 32.degree., and poured into 6000 mL H2O while simultaneously adding 50% <b>NaOH</b> to maintain pH 5.3 to give 528.9 g I with 0.36 and 2.40 <b>sulfate</b> and <b>Ac</b> SD, resp., sol. in aq. Me2CO, with 328 s break-up time in distd. H2O in the slow break-up test, and 7479 psi dry tensile strength. Sulfation of <b>cellulose</b> <b>acetate</b> butyrate also gave sodium <b>cellulose</b> <b>acetate</b> butyrate <b>sulfate</b> [57485-48-0].				
ST	sodium <b>cellulose acetate sulfate</b> ; <b>cellulose</b> ester <b>sulfate</b> manuf				
IT	Pulp, <b>cellulose</b> (sulfation and acetylation of)				
IT	<b>51910-28-2P</b> 57485-48-0P RL: IMF (Industrial manufacture); PREP (Preparation) (manuf. of)				
IT	<b>51910-28-2P</b> RL: IMF (Industrial manufacture); PREP (Preparation) (manuf. of)				
RN	51910-28-2 HCAPLUS				
CN	Cellulose, acetate hydrogen sulfate, sodium salt (9CI) (CA INDEX NAME)				
CM	1				
CRN	9004-34-6				
CMF	Unspecified				
CCI	PMS, MAN				

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

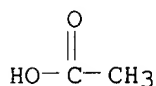
CRN 7664-93-9

CMF H2 O4 S



CM 3

CRN 64-19-7  
CMF C2 H4 O2



L100 ANSWER 12 OF 16 HCAPLUS COPYRIGHT 2002 ACS

AN 1976:8844 HCAPLUS

DN 84:8844

TI Body fluid-impermeable films for sanitary napkins

IN Tunc, Deger

PA Johnson and Johnson, USA

SO Ger. Offen., 33 pp.

CODEN: GWXXBX

DT Patent

LA German

IC C08B

CC 62-1 (Essential Oils and Cosmetics)

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2461870	A1	19750717	DE 1974-2461870	19741230
	US 3897782	A	19750805	US 1974-431455	19740107
	NO 7404492	A	19750708	NO 1974-4492	19741212
	DK 7406625	A	19750825	DK 1974-6625	19741218
	AU 7476730	A1	19760624	AU 1974-76730	19741220
	SE 7500061	A	19750708	SE 1975-61	19750103
	FI 7500016	A	19750708	FI 1975-16	19750106
	FR 2256748	A1	19750801	FR 1975-253	19750106
	BE 824174	A1	19750707	BE 1975-152206	19750107
	NL 7500174	A	19750709	NL 1975-174	19750107
	ZA 7500128	A	19760825	ZA 1975-128	19750107
	NO 7503401	A	19750708	NO 1975-3401	19751008
PRAI	US 1974-431455		19740107		
	NO 1974-4492		19741212		

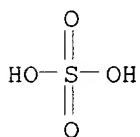
AB Films impermeable to body fluids (blood and urine), but which decompd. in water, as when flushed in a toilet, were prepd. from **cellulose** Cl-4 acyl ester **sulfate** resins having a degree of **sulfate** substitution of 0.27-0.36. For example, an aq. **cellulose** slowly was treated with **H2SO4** and Na acetyl **sulfate**, and the **cellulose sulfate** deriv. was acylate with **acetic anhydride** to give a soln. of sodium **cellulose acetate sulfate** [51910-28-2], with an **SO42-** substitution degree of 0.36. The soln. was poured onto a silicone release paper and evapd. to give a light-permeable flexible film. The compn. of the **cellulose** ester **sulfate** obtained was varied by changing the concns. of **H2SO4** and **acetic anhydride** used. The use of

these films in flushable sanitary napkins and similar products is illustrated.

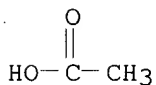
ST **cellulose** ester sulfate film  
 IT Surgical dressings  
     (sanitary napkins, **cellulose acetate sulfate** films for)  
 IT **51910-28-2** 57485-48-0  
     RL: BIOL (Biological study)  
     (films of, for sanitary napkins)  
 IT **51910-28-2**  
     RL: BIOL (Biological study)  
     (films of, for sanitary napkins)  
 RN 51910-28-2 HCAPLUS  
 CN Cellulose, acetate hydrogen sulfate, sodium salt (9CI) (CA INDEX NAME)  
  
 CM 1  
  
 CRN 9004-34-6  
 CMF Unspecified  
 CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2  
  
 CRN 7664-93-9  
 CMF H2 O4 S



CM 3  
  
 CRN 64-19-7  
 CMF C2 H4 O2



L100 ANSWER 13 OF 16 HCAPLUS COPYRIGHT 2002 ACS

AN 1972:528338 HCAPLUS

DN 77:128338

TI Synthesis and study of the properties of **cellulose sulfoacetates**

AU Mirlas, D. L.

CS USSR

SO Tr. Vses. Nauch.-Issled. Inst. Tsellyul.-Bum. Prom. (1971), No. 59, 15-19 ←  
 CODEN: TNTBAQ

DT Journal

LA Russian

CC 43-3 (**Cellulose**, Lignin, Paper, and Other Wood Products)

AB Acetylation of cotton in the presence of **H2SO4** as the catalyst  
 gave mixed esters: **cellulose acetate sulfates**



(I) [9032-44-4]; I contg. 17.2% of chem. bonded **H2SO4** was insol. in acetone. The hydrolysis of I with 98-9% **AcOH** soln., without neutralization of the **sulfate** groups and of the free (occluded) **H2SO4**, gave I contg. 1.0% chem. bonded **H2SO4** which was sol. in acetone and had properties similar to **cellulose** diacetate used in the textile industry.

ST hydrolysis **cellulose acetate sulfate**; mixed ester **cellulose**  
 IT Hydrolysis  
     (of **cellulose acetate sulfate**)  
 IT **9032-44-4P**  
     RL: SPN (Synthetic preparation); PREP (Preparation)  
         (prepn. of)  
 IT **9032-44-4P**  
     RL: SPN (Synthetic preparation); PREP (Preparation)  
         (prepn. of)  
 RN 9032-44-4 HCAPLUS  
 CN Cellulose, acetate sulfate (9CI) (CA INDEX NAME)

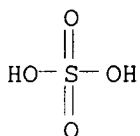
CM 1

CRN 9004-34-6  
 CMF Unspecified  
 CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

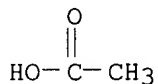
CM 2

CRN 7664-93-9  
 CMF H2 O4 S



CM 3

CRN 64-19-7  
 CMF C2 H4 O2



L100 ANSWER 14 OF 16 HCAPLUS COPYRIGHT 2002 ACS

AN 1962:61657 HCAPLUS

DN 56:61657

OREF 56:11865d-f

TI **Cellulose** esters containing the sulfonate group

IN Touey, George P.; Kiefer, John E.

PA Eastman Kodak Co

DT Patent

LA Unavailable

CC 49 (**Cellulose**, Lignin, Paper, and Other Wood Products)

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 3008952		19611114	US	19600201 ←
AB	<p>H2O-sol. <b>cellulose</b> derivs., i.e. <b>cellulose</b> esters  contg. .alpha.-sulfo aliphatic acyl groups, are prepd. The esters have  the formula <math>X(OCOCnH_{2n+1})x[OCOCH(R)OSO_2M]y</math>, in which X is a substituted or  unsubstituted <b>anhydroglucose</b> unit of the <b>cellulose</b>  chain, n = 1-3, X + Y .ltoreq. 3; R is H or C1-2 alkyl group, and M is H,  Na, or K. These products are prepd. by treating an .alpha.-sulfoaliphatic  acid contg. 2-4 C atoms with <b>cellulose</b> by using a fatty acid  anhydride as an impeller and a basic catalyst. Thus, wood pulp 162 was  slurried in C5H5N 1000, and .alpha.-sulfoacetic acid 140 and <b>Ac2O</b>  400 parts were added. This mixt. was refluxed 3 hrs. until the wood pulp  dissolved. The product was pptd. and washed in a soln. of MeOH 80, H2O  17, and NaOAc 3%, and was dried at 100.degree.. The <b>cellulose</b>  <b>acetate</b> Na <b>sulfoacetate</b> contained 4.3% S and 32.1% Ac. A  1% H2O soln. of the product had a viscosity of 500 cp. at 25.degree.</p>				
IT	<b>Cellulose</b> esters				
	(with .alpha.-sulfoacyl groups)				
IT	<b>Cellulose acetate, sulfoacetate, Na salt</b>				
IT	Acids, standard solns. of				
	(.alpha.-sulfo carboxylic, mixed esters with <b>cellulose</b> from fatty acid anhydrides)				
IT	123-43-3, <b>Acetic acid, sulfo-</b>				
	<b>(cellulose acetate ester, Na salt)</b>				
IT	9003-07-0, Propene polymers				
	(rayon tow sprayed with, tobacco smoke filter from)				
L100	ANSWER 15 OF 16 HCAPLUS COPYRIGHT 2002 ACS				
AN	<b>1962:26017</b> HCAPLUS				
DN	<b>56:26017</b>				
OREF	56:5000i, 5001a				
TI	Properties and potential uses of sodium <b>cellulose</b> <b>acetate sulfate</b> , a new water-soluble <b>cellulose</b> derivative				
AU	Touey, George P.; Gearhart, William M.				
CS	Eastman Kodak Co., Kingsport, TN				
SO	J. Chem. and Eng. Data (1961), 6, 566-9 ←				
DT	Journal				
LA	Unavailable				
CC	49 ( <b>Cellulose, Lignin, Paper, and Other Wood Products</b> )				
AB	<p>The title ester (I) was prepd. by treating <b>cellulose</b> with a  soln. of Na2SO4 and <b>Ac2O</b> in <b>AcOH</b>. The resultant  material was a neutral, white, granular, free-flowing powder contg. a  small amt. of urea as a heat stabilizer. The normal moisture content was  8-10%. The viscosity of 3 solns. was evaluated with respect to stability,  effect of pH, and compatibility with salt solns. and other H2O-sol.  polymers. The films prepd. were clear, flexible, and oil resistant. The  addn. of a plasticizer imparts heat sealability at 120.degree..  Applications of I include: warp size for <b>cellulose</b>  <b>acetate</b> yarn, adhesive for paper, thickening agent for cheap  glues, creaming agent for natural rubber latex, material for oilwell  drilling muds, and a detergent additive to prevent soil deposition during  laundering.</p>				
IT	<b>Cellulose, sulfate acetate, Na salt</b>				
	(and its uses)				
IT	<b>51910-28-2, Cellulose acetate, sulfate</b>				
	Na salt				
	(and its uses)				
IT	57-13-6, Urea				
	<b>(cellulose acetate sulfate Na salt</b> heat-stabilized by)				
IT	<b>51910-28-2, Cellulose acetate, sulfate</b>				

Na salt

(and its uses)

RN 51910-28-2 HCAPLUS

CN Cellulose, acetate hydrogen sulfate, sodium salt (9CI) (CA INDEX NAME)

CM 1

CRN 9004-34-6

CMF Unspecified

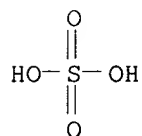
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 7664-93-9

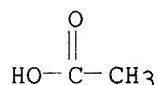
CMF H2 O4 S



CM 3

CRN 64-19-7

CMF C2 H4 O2



L100 ANSWER 16 OF 16 HCAPLUS COPYRIGHT 2002 ACS

AN 1919:13914 HCAPLUS

DN 13:13914

OREF 13:2760h-i,2761a-e

TI Chloroform-and acetone-soluble **cellulose acetate**

AU Ost., H.

SO Z. angew. Chem. (1919), 32, 66-70,76-9,82-9 ←

DT Journal

LA Unavailable

CC 23 (**Cellulose** and Paper)

AB cf. C. A. 7, 3836, 2303. This article deals only with **cellulose acetates** in which the **cellulose** molecule has not been broken down. The general methods of prepn. and analysis are briefly reviewed. O. claims his method of sapon. with cold 50% **H2SO4** (by vol.) followed by steam distn. is better than that of Knoevenagel (C. A. 9, 524), using alkali without distn. The different methods of prepg. **cellulose** triacetate are compared as well as the products. The following catalysts are considered: **ZnCl2**, **H2SO4**, **(NH3Me)2SO4**; also the general subjects of incomplete esterification, acetylation of hydrocellulose, behavior of primary **acetates** toward hot dil. acids, pseudo acetone soly., acetone soly., and methods of obtaining it. Many references are given to both patent and technical literature; also many analyses of typical products. All **cellulose acetates** made with catalysts containing the **sulfate**

radical, contain **sulfoacetate**; the acetylation is incomplete; and low temp. and longer time favor low **sulfoacetate** content. The mixed esters containing **sulfoacetate** are slimy, undergo partial sapon. when pptd. with H<sub>2</sub>O, dissolve only partially or not at all in chloroform, dissolve in alcohol and as % H<sub>2</sub>SO<sub>4</sub> increases, in water. H<sub>2</sub>SO<sub>4</sub> is split off when the **sulfoacetates** are boiled with water, and where % H<sub>2</sub>SO<sub>4</sub> is high, a spontaneous sapon. occurs even in the dry, with gradual loss of AcOH. All primary **acetates** give a part sol. in pure acetone, but on evapn. of the acetone soln. the residue is not again completely sol. in acetone. Furthermore, the part originally insol. in acetone if dissolved in CHCl<sub>3</sub>, on evapn. of the CHCl<sub>3</sub> becomes partially sol. in acetone. These are examples of "pseudo" acetone soly. All non-degraded **cellulose acetates** are considered as derivs. of hydrocellulose. No primary **acetate** is acetone-sol., and only certain secondary **acetates**. The sol. secondary **acetates** are derived from the former on partial sapon., always contain less AcOH, and are almost free from H<sub>2</sub>SO<sub>4</sub>. Dil. aq. mineral acids saponify readily but do not give acetone-sol. products. H<sub>2</sub>SO<sub>4</sub>-bisulfates, and methylammonium **sulfate** with a little H<sub>2</sub>O, give acetone-sol. products in AcOH soln. Particularly good acetone soly. may be obtained by heating **acetates** made with ZnCl<sub>2</sub> with 95% AcOH; or with aniline or phenol with or without H<sub>2</sub>O. Acetone soly. does not depend on any particular degree of sapon. The claim that acetone soly. is due to a rearrangement and not to sapon. is erroneous and based on incorrect detn. of the AcOH content.

=> fil wpix

FILE 'WPIX' ENTERED AT 13:37:06 ON 07 DEC 2002

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FILE LAST UPDATED: 4 DEC 2002 <20021204/UP>

MOST RECENT DERWENT UPDATE: 200278 <200278/DW>

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>>> FOR A COPY OF THE DERWENT WORLD PATENTS INDEX STN USER GUIDE, PLEASE VISIT: [http://www.stn-international.de/training\\_center/patents/stn\\_guide.pdf](http://www.stn-international.de/training_center/patents/stn_guide.pdf) <<<

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=> d all abeq tech abex tot

L121 ANSWER 1 OF 3 WPIX (C) 2002 THOMSON DERWENT

AN 2000-543366 [49] WPIX

DNC C2000-161640

TI Cellulose acetate preparation from cellulose, by swelling in acetic acid, suspending in sulfuric-acetic acid solution and reacting with **acetic anhydride**, giving water-soluble, high viscosity product useful as thickener.

DC A11 D17

IN BULEON, A; CHAUVELON, G; SAULNIER, L; THIBAUT, J F; THIBAUT, J  
 PA (INRG) INRA INST NAT RECH AGRONOMIQUE  
 CYC 91  
 PI WO 2000044791 A1 20000803 (200049)\* FR 26p C08B007-00 <--  
 RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL  
 OA PT SD SE SL SZ TZ UG ZW  
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 FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS  
 LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL  
 TJ TM TR TT UA UG US UZ VN YU ZA ZW  
 FR 2789080 A1 20000804 (200049) C08B007-00 <--  
 AU 2000022997 A 20000818 (200057) C08B007-00 <--  
 EP 1165618 A1 20020102 (200209) FR C08B007-00 <--  
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 RO SE SI  
 BR 2000007802 A 20020205 (200213) C08B007-00 <--  
 ADT WO 2000044791 A1 **WO 2000-FR205 20000128**; FR 2789080 A1 FR  
 1999-1049 19990129; AU 2000022997 A AU 2000-22997 20000128; EP 1165618 A1  
 EP 2000-901672 20000128, **WO 2000-FR205 20000128**; BR 2000007802 A  
 BR 2000-7802 20000128, **WO 2000-FR205 20000128**  
 FDT AU 2000022997 A Based on WO 200044791; EP 1165618 A1 Based on WO  
 200044791; BR 2000007802 A Based on WO 200044791  
 PRAI FR 1999-1049 19990129  
 IC ICM **C08B007-00**  
 ICS **C08B003-06; C08B005-14; C08J003-075**  
 AB WO 200044791 A UPAB: 20001006  
 NOVELTY - Direct preparation of a mixture (I) of water-soluble cellulose  
 sulfo-acetate derivatives by esterification of a cellulosic material (II)  
 involves: (i) suspending (II) in a solution of glacial acetic acid and  
 removing the excess acetic acid; (ii) suspending the acetic acid-swollen  
 product in a solution of sulfuric acid in glacial acetic acid; and (iii)  
 adding **acetic anhydride** and reacting.  
 DETAILED DESCRIPTION - An INDEPENDENT CLAIM is included for (I)  
 obtained by the process, in which the degree of acetylation is 1.5-2.4.  
 USE - (I) are water-soluble cellulose acetate derivatives which have  
 water-retaining properties and form thermo-reversible, partially  
 thixotropic gels (claimed). They are potentially useful as thickeners (due  
 to their high viscosity); no specific applications are given.  
 ADVANTAGE - The process gives (I) directly (i.e. with no need for a  
 preliminary stage for the deacetylation of cellulose triacetate) and with  
 almost no depolymerization of the cellulose chain. (I) have controllable  
 and variable degrees of acetylation and polymerization (depending on  
 (II)); high solubility in water and polar solvents; and good rheological  
 properties, i.e. high viscosity, similar to those of associated polymers.  
 Dwg.0/2  
 FS CPI  
 FA AB  
 MC CPI: A03-A02; A03-A03; A10-A; A10-E07; A10-E24; D06-H  
 TECH UPTX: 20001006  
 TECHNOLOGY FOCUS - POLYMERS - Preferred Process: The process further  
 comprises: (iv) terminating the reaction by adding aqueous acetic acid  
 solution; (v) optionally centrifuging; (vi) washing and discarding any  
 sediment formed; (vii) adding water to precipitate any cellulose  
 triacetate formed; (viii) centrifuging and discarding the sediment; (ix)  
 neutralizing the supernatant, optionally with cooling; (x) dialyzing the  
 obtained precipitate; and (xi) lyophilizing the solution. Preferably in  
 step (vi) the sediment is washed 3 times with acetic acid then 3 times  
 with deionized water; in step (vii) the mixture is kept at 4degreesC for  
 ca.16 hours; and step (ix) involves slow addition of sodium hydroxide  
 solution to give a pH of 7.5, and is carried out with cooling in an ice  
 bath while continuously monitoring the pH such that it does not exceed 8.  
**Acetic anhydride** is used at 3-7 (preferably 3.2) moles  
 per mole of **anhydroglucose**. Esterification is carried out for

1-60 (preferably 20-30) minutes at 25-80 (preferably ca. 40) degreesC. (II) consists of purified cellulosic residues obtained from agricultural by-products, especially cereal (e.g. wheat or maize) bran; wood (e.g. pine) cellulose; or microcrystalline cellulose. Preferred Product: (I) has a degree of sulfation of 0.2-0.6 (preferably 0.3), and is specifically sulfated only in the 6-positions of the **anhydroglucose** units. The viscosity average degree of polymerization of (I) is almost identical with that of (II), e.g. 210-1500. The intrinsic viscosity of (I) is 600-1500 ml/g. (I) have water-retention properties, in that they swell up to 200 ml/g in presence of salts, while remaining insoluble. (I) are free of triacetyl derivatives, and are thermally stable for 16 hours at 80degreesC.

## ABEX

EXAMPLE - Avicel (RTM; 97.4% pure, highly crystalline cellulose having a degree of polymerization of 210) was suspended in acetic acid solution (50 g/l) with stirring for 15 minutes at ambient temperature. After centrifugation at 2250 g for 10 minutes at 20degreesC, the supernatant was discarded. This procedure was repeated twice. The cellulose (50 g/l) was then immersed at room temperature in a solution of acetic acid and sulfuric acid (12 g/l), followed by stirring for 1 minute at room temperature. Acetic anhydride (3.2 moles per mole anhydroglucose) was added, and the mixture was stirred for 1 minute then further stirred for 30 minutes at 40degreesC. Reaction was terminated by adding a 70% solution of acetic acid, followed by stirring at ambient temperature for 30 minutes. After centrifugation at 2250 g for 10 minutes at 35degreesC, the supernatant was recovered and the sediment was washed 3 times with acetic acid then 3 times with deionized water. The washings were combined with the supernatant. The obtained solution was added slowly to 4 times its volume of deionized water under stirring, and the mixture was kept at 4degreesC for 16 hours to precipitate any cellulose triacetate present. The supernatant was recovered by centrifugation at 17500 g for 20 minutes at 4degreesC, neutralized to pH 7.5 by slow addition of 4M sodium hydroxide solution and cooled in an ice-bath. The obtained precipitate was dialyzed against deionized water until the conductivity of the dialysis water was below 1 muS/cm. The obtained cellulose sulfo-acetate contained 531 mg/g of cellulose, had a degree of acetylation of 2.3 and a degree of sulfation of 0.3, was non-crystalline and had an intrinsic viscosity of 1470 ml/g. The esterification yield was 1.7 g/g.

L121 ANSWER 2 OF 3 WPIX (C) 2002 THOMSON DERWENT

AN 1988-312832 [44] WPIX

DNC C1988-138514

TI Prepn. of **cellulose sulphate** - by treating **cellulose** with sodium, potassium, ammonium or magnesium **sulphate** or pyrosulphate in DMF.

DC All A81

IN BILDYUKEVI, A V; GERT, E V; TORGASHOV, V I

PA (BELU) BELORUSSIAN LENIN UNIV

CYC 1

PI SU 1381118 A 19880315 (198844)\* 4p

ADT SU 1381118 A SU 1986-4055508 19860415

PRAI SU 1986-4055508 19860415

IC C08B005-14

AB SU 1381118 A UPAB: 19930923

Cellulose sulphates are obtd. more efficiently when cellulose is reacted with a soln. of Na, K, NH<sub>4</sub> or Mg sulphate or pyrosulphate in DMF, in the presence of additional **acetic anhydride** taken in amts. of 0.48-2.83 g/g. of cellulose. The prod. finds use in the mfr. of adhesives, suspensions and emulsifiers.

ADVANTAGE - Time of reaction is reduced for 12-48 to 3-10 hrs.

Bul.10/15.3.88.

O/O

FS CPI

FA AB  
MC CPI: A03-A03; A10-E24; A12-A05A; A12-W12C

L121 ANSWER 3 OF 3 WPIX (C) 2002 THOMSON DERWENT  
AN 1975-39378W [24] WPIX  
TI Fast and simple prodn. of **sulphatized** carbohydrates - by  
reacting carbohydrates with sulphuric acid and ethers, and removing excess  
acid.  
DC A11 A96 A97 B04  
PA (BISC-I) BISCHOFF K H  
CYC 1  
PI DD 112456 A 19750412 (197524)\*  
PRAI DD 1974-177003 19740307  
IC C08B005-14; C08B019-02  
AB DD 112456 A UPAB: 19930831  
Carbohydrates and derivs. are sulphatised by reacting them with H2SO4 to  
which 0.2-5 mole of a liq. ether R1-O-R2 is added (where R1 and R2=alkyl),  
for 2-60 min. at 10-30 degrees C.. (I) are sepd. and excess H2SO4 is  
removed with miscible org. solvents (I) are used as additives in the  
prepn. of surface-structures, as emulsion stabilisers in pharmaceutical-,  
cosmetic- and food inds. as well as for analytical or technical separating  
processes. The process is technologically and technically simple and  
economical.  
Yields are high and prods. pure.

FS CPI  
FA AB  
MC CPI: A03-A01; A10-E12; B04-C02; B12-M06

=> d his

(FILE 'HOME' ENTERED AT 12:32:17 ON 07 DEC 2002)  
SET COST OFF

FILE 'REGISTRY' ENTERED AT 12:32:34 ON 07 DEC 2002

E CELLULOSE/CN  
L1 1 S E3  
E CELLULOSE SULFOACETATE/CN  
E SULFOACETATE/CN  
L2 1 S E4  
L3 4 S 9004-34-6/CRN AND 123-43-3/CRN  
L4 3 S L3 NOT C2H3CLO2  
E CELLULOSE, SULFOACETATE/CN  
L5 3 S E4-E6  
L6 3 S L4,L5  
E ACETIC ACID/CN  
L7 1 S E3  
E SULFURIC ACID/CN  
L8 1 S E3  
E ACETIC ANHYDRIDE/CN  
L9 1 S E3  
E ANHYDROGLUCOSE/CN  
E GLUCOSE, ANHYDRO/CN  
E ANHYDROGLUCOSE  
L10 2 S E3  
L11 1 S L10 NOT C9H18O6  
L12 117 S C6H10O5/MF AND 2/NR  
L13 41 S 197.88.1/RID AND L12  
L14 11 S L13 AND ?GLUCO?/CNS  
L15 4 S L14 NOT ((D OR T)/ELS OR LABELED OR 13C#)  
L16 4 S L11,L15  
E SODIUM HYDROXIDE/CN  
L17 1 S E3

L18 1 S GLACIAL ACETIC ACID/CN  
L19 1 S L7,L18

FILE 'HCAPLUS' ENTERED AT 12:39:58 ON 07 DEC 2002

L20 3 S L6

FILE 'REGISTRY' ENTERED AT 12:41:11 ON 07 DEC 2002

L21 1 S 9004-35-7  
L22 1 S 9032-44-4  
L23 9 S 9004-34-6/CRN AND 64-19-7/CRN AND 7664-93-9/CRN  
L24 6 S L23 NOT (BUTANOATE OR PROPANOATE OR NITRATE)

FILE 'HCAPLUS' ENTERED AT 12:43:34 ON 07 DEC 2002

L25 47 S L22 OR L24 OR L6  
L26 15 S CELLULOSE() (SULFOACETATE OR SULPHOACETATE)  
L27 30 S CELLULOSE(L) (SULFOACETATE OR SULPHOACETATE)  
L28 15 S L27 NOT L26  
SEL DN AN 14 7  
L29 2 S E1-E6 AND L28  
L30 6 S L25 AND L26-L29  
L31 1528 S CELLULOSE (L) ACETATE (L) (SULFATE OR SULPHATE)  
L32 648 S CELLULOSE (S) ACETATE (S) (SULFATE OR SULPHATE)  
L33 230 S CELLULOSE (5A) ACETATE (5A) (SULFATE OR SULPHATE)  
L34 133 S CELLULOSE (2A) ACETATE (2A) (SULFATE OR SULPHATE)  
L35 41 S L25 AND L31-L34  
L36 49 S L25,L29,L30,L35  
L37 59990 S L1  
L38 297553 S CELLULOSE?  
L39 301708 S L37,L38  
L40 236105 S CELLULOS?/SC,SX,CW  
L41 445224 S L37-L40  
L42 3333 S L41 AND (L19 OR ACETIC ACID (L)GLACIAL)  
L43 4954 S L41 AND ACETIC ACID  
L44 53985 S L41 AND ACETATE  
L45 57769 S L42-L44  
L46 2642 S L45 AND (L8 OR H2SO4 OR (SULFURIC OR SULPHURIC) ( )ACID)  
L47 101 S L46 AND (L9 OR ACETIC() (ANHYDRIDE OR OXIDE) OR ACETYL() (ACETA  
L48 0 S L47 AND L16  
L49 1 S L47 AND (ANHYDROGLUCOSE OR ANHYDRO() (GLUCOSE OR GLUCOPYRANOSE  
L50 141 S L36,L34  
L51 4 S L50 AND (L9 OR ACETIC() (ANHYDRIDE OR OXIDE) OR ACETYL() (ACETA  
L52 4 S L50 AND (L16 OR ANHYDROGLUCOSE OR ANHYDRO() (GLUCOSE OR GLUCOP  
L53 8 S L51,L52  
L54 2 S L53 AND L42  
L55 3 S L53 AND L43  
L56 4 S L53 AND (L8 OR H2SO4 OR (SULFURIC OR SULPHURIC) ( )ACID)  
L57 5 S L54-L56  
E CHAUVELON G/AU  
L58 5 S E3,E4  
E SAULNIER L/AU  
L59 59 S E3,E6,E7  
E BULEON A/AU  
L60 106 S E3,E4  
E THIBAUT J/AU  
L61 257 S E3,E7  
L62 90 S E19,E20  
L63 2 S L58-L62 AND L50  
L64 4 S L57 NOT NONAQUEOUS/TI  
L65 5 S L63,L64  
L66 6 S L29,L65  
SEL DN AN L20 1  
L67 1 S E1-E3 AND L20  
L68 7 S L66,L67



L69 31 S (ACOH OR AC2O) AND L50  
L70 14 S L60 AND (PREP OR IMF OR IMF OR PNU OR SPN)/RL  
SEL DN AN 4  
L71 1 S L70 AND E4-E6  
L72 7 S L68,L71  
L73 1 S L6/P  
L74 11 S L24/P  
L75 9 S L22/P  
L76 14 S L72-L75  
L77 14 S L76 AND L20,L25-L76  
L78 6 S L77 AND (ACETIC ACID OR ACOH)  
L79 7 S L77 AND (ACETIC ANHYDRIDE OR AC2O)  
L80 0 S L77 AND (ACETIC OXIDE OR ETHANOIC ANHYDRIDE OR ACETYL() (ACETA  
L81 2 S L77 AND L19,L9  
L82 9 S L77 AND (L8 OR H2SO4 OR SO4# OR (SULFURIC OR SULPHURIC)()ACI  
L83 1 S L77 AND (L16 OR ANHYDROGLUCOSE OR ANHYDROGLUCOPYRANOSE OR ANH  
L84 2 S L77 AND (L17 OR NAOH OR (NA OR SODIUM)()HYDROXIDE)  
L85 0 S L77 AND (KOH OR (K OR POTASSIUM)()HYDROXIDE)  
L86 11 S L78-L85  
L87 3 S L77 NOT L86  
L88 14 S L86,L87  
SEL HIT RN

FILE 'REGISTRY' ENTERED AT 13:11:30 ON 07 DEC 2002

L89 11 S E7-E17  
L90 9 S L1,L19,L8,L9,L16,L17  
L91 5 S L90 NOT L89

FILE 'REGISTRY' ENTERED AT 13:12:26 ON 07 DEC 2002

L92 2 S L6,L22,L24 NOT L89-L91  
SEL RN L89 1-7  
L93 7 S E18-E24  
L94 9 S L92,L93

FILE 'HCAPLUS' ENTERED AT 13:15:16 ON 07 DEC 2002

L95 47 S L94  
L96 35 S L95 NOT L88  
SEL DN AN 7 34  
L97 2 S L96 AND E25-E30  
L98 16 S L88,L97 AND L20,L25-L88,L95-L97  
L99 9 S L98 AND (H2SO4# OR SO4 OR ACOH OR AC2O)  
L100 16 S L98,L99

FILE 'HCAPLUS' ENTERED AT 13:19:03 ON 07 DEC 2002

FILE 'WPIX' ENTERED AT 13:19:35 ON 07 DEC 2002

E WO2000-FR205/AP, PRN  
L101 1 S E3  
E C08B007/IC, ICM, ICS  
L102 55 S E3-E5  
E C08B005-14/IC, ICM, ICS  
L103 79 S E3-E5  
E C08B003-06/IC, ICM, ICS  
L104 275 S E3-E5  
L105 3 S L103 AND L104  
L106 6 S L102 AND L103,L104  
L107 8 S L105,L106  
SEL DN AN 2 3  
L108 2 S L107 AND E1-E4  
L109 121 S L102,L103 NOT L105-L108  
L110 59 S L109 AND (SULFAT? OR SULPHAT?)/TI  
L111 46 S L110 AND CELLULO?/TI  
L112 13 S L110 NOT L111

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SEL DN AN 11
L113      1 S L112 AND E5
L114      1 S L111 AND (?ANHYDROGLUCO? OR ?ANHYDRO GLUCO?)
L115      5 S L102,L103 AND (?ANHYDROGLUCO? OR ?ANHYDRO GLUCO?)
          SEL DN AN 1
L116      1 S E6-E7
L117      7 S L102,L103 AND (ACETIC OR ACETYL)() (ANHYDRIDE OR OXIDE OR ACE
L118      1 S L102,L103 AND (AC2O OR ETHANOIC ANHYDRIDE)
          SEL DN AN 1 5 L117
L119      2 S E8-E11
L120      3 S L101,L113,L116,L119
L121      3 S L120 AND L101-L120
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FILE 'WPIX' ENTERED AT 13:37:06 ON 07 DEC 2002